

In the Claims:

Please amend the claims as follows.

26. (Amended) A method of manufacturing a semiconductor device comprising:

providing a semiconductor film on an insulating surface;

providing said semiconductor film with a catalyst metal-containing material;

crystallizing said semiconductor film by heating in a way that causes said catalyst metal to diffuse through the semiconductor film and function to promote the crystallization of the semiconductor film;

forming a gettering layer comprising phosphorus over said semiconductor film after the crystallization; and

heating said semiconductor film and said gettering layer at a temperature from 500°C to 800°C in order to getter the catalyst metal in said semiconductor film using said gettering layer.

27. (Amended) A method according to claim 26 wherein said semiconductor device is a photoelectric conversion device.

34. (Amended) A method of manufacturing a semiconductor device comprising:

providing a substantially intrinsic semiconductor film on an insulating surface;

providing said semiconductor film with a catalyst metal-containing material;

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*LJZ*  
cont'd

crystallizing said semiconductor film by heating in a way that causes said catalyst metal to diffuse through the semiconductor film and function to promote the crystallization of said semiconductor film;

forming a gettering layer comprising phosphorus over said semiconductor film after the crystallization; and

heating said semiconductor film and said gettering layer in order to getter the catalyst metal in said semiconductor film by said gettering layer.

35. (Amended) A method according to claim 34 wherein said semiconductor device is a photoelectric conversion device.

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42. (Amended) A method of manufacturing a semiconductor device comprising:

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providing a semiconductor film on an insulating surface;  
providing a catalyst metal-containing material on said semiconductor film;

crystallizing said semiconductor film by heating in a way that causes said catalyst metal to diffuse through the

semiconductor film and function to promote the crystallization  
of said semiconductor film;

*Sub H*  
*EZ*  
forming a gettering layer comprising phosphorus over said  
semiconductor film after the crystallization; and

*Contd*  
heating said semiconductor film and said gettering layer in a  
nitrogen atmosphere in order to getter the catalyst metal  
contained in said semiconductor film by said gettering layer.

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43. (Amended) A method according to claim 42 wherein said  
semiconductor device is a photoelectric conversion device.

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51. (Amended) A method of manufacturing a semiconductor device  
having a junction, said method comprising:

*EZ*  
providing a semiconductor film comprising amorphous silicon  
on an insulating surface;

*EZ*  
providing a catalyst metal-containing material on said  
semiconductor film;

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crystallizing said semiconductor film by heating in a way  
that causes said metal to diffuse through the semiconductor film  
and to promote the crystallization thereof;

forming a gettering layer comprising phosphorus over said  
semiconductor film after the crystallization;

*SJH*  
*Egg*  
*Cont'd*

heating said semiconductor film and said gettering layer at a temperature from 500°C to 800°C in order to getter the metal included in said semiconductor film by said gettering layer; and forming a doped semiconductor film on said semiconductor film to form a junction.

52. (Amended) A method according to claim 51 wherein said semiconductor device is a photoelectric conversion device.

59. (Amended) A method of manufacturing a semiconductor device having a junction, said method comprising:

providing a substantially intrinsic semiconductor film on an insulating surface;

*Egg*  
*SJH*

providing a catalyst metal on said semiconductor film; crystallizing said semiconductor film by heating to cause said catalyst metal to diffuse through the semiconductor film and to promote the crystallization of said semiconductor film;

forming a gettering layer comprising phosphorus over said semiconductor film after the crystallization thereof;

heating said semiconductor film and said gettering layer in order to getter the catalyst metal in said semiconductor film by said gettering layer; and

forming a junction using said intrinsic semiconductor film.

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50. (Amended) A method according to claim 59 wherein said semiconductor device is a photoelectric conversion device.

67. (Amended) A method of manufacturing a semiconductor device having a junction, said method comprising:

providing a semiconductor film comprising amorphous silicon formed on an insulating surface;

providing a catalyst metal-containing material on said semiconductor film;

crystallizing said semiconductor film by heating in a way that causes said catalyst metal to diffuse through the semiconductor film and function to promote the crystallization of said semiconductor film;

forming a gettering layer comprising phosphorus over said semiconductor film after the crystallization; and

heating said semiconductor film and said gettering layer in a nitrogen atmosphere in order to getter the catalyst metal contained in said semiconductor film by said gettering layer;

and

forming a junction on said semiconductor film.

68. (Amended) A method according to claim 67 wherein said semiconductor device is a photoelectric conversion device.

76. (Amended) A method of manufacturing a semiconductor device, comprising:

providing a semiconductor film on an insulating surface; forming a catalyst metal-containing material on said semiconductor film, said catalyst being a material which facilitates crystallization of said semiconductor film, but which when present in a final product of the semiconductor device degrades operation of the semiconductor device;

*GG*  
*SW*  
*H1*  
crystallizing said semiconductor film by heating in a way that causes said catalyst metal-containing material to diffuse into at least a part of the semiconductor film, said catalyst metal-containing material when so diffused functioning to facilitate said crystallization;

forming a gettering layer comprising phosphorus over said semiconductor film after said crystallization; and processing said semiconductor film and said gettering layer to remove at least one portion of said catalyst metal in said semiconductor film.

81. (Amended) A method of manufacturing a semiconductor device comprising:

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providing a semiconductor film on an insulating surface; providing said semiconductor film with a metal-containing material;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and function to promote the crystallization of the semiconductor film;

introducing a gettering material into an entire surface of said crystallized semiconductor film;

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H  
C/S  
Contd*  
heating said semiconductor film after introducing said gettering material at a temperature from 500°C to 800°C in order to getter the metal in said semiconductor film; and removing at least said entire surface after gettering the metal in said semiconductor film.

82. (Amended) A method of manufacturing a semiconductor device comprising:

providing a semiconductor film doped with boron at a concentration of 0.001-0.1 atm% on an insulating surface;

providing said semiconductor film with a metal-containing material;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and function to promote the crystallization of said semiconductor film;

forming a gettering layer comprising phosphorus over said semiconductor film after the crystallization; and

heating said semiconductor film and said gettering layer in order to getter the metal in said semiconductor film by said gettering layer.

83. (Amended) A method of manufacturing a semiconductor device comprising:

*Sub H* > providing a substantially intrinsic semiconductor film on an insulating surface;

*Off* providing said semiconductor film with a metal-containing material;

*Contd* crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and function to promote the crystallization of said semiconductor film;

introducing a gettering material into an entire surface of the crystallized semiconductor film;

heating said semiconductor film after introducing said gettering material in order to getter the metal in said semiconductor film; and

removing at least said entire surface after gettering the metal in said semiconductor film.

84. (Amended) A method of manufacturing a semiconductor device comprising:

providing a semiconductor film doped with boron at a concentration of 0.001-0.1 atm% on an insulating surface;

providing said semiconductor film with a metal-containing material;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and function to promote the crystallization of said semiconductor film;

introducing a gettering material into an entire surface of the crystallized semiconductor film;

heating said semiconductor film after introducing said gettering material in order to getter the metal in said semiconductor film; and

removing at least said entire surface after gettering the metal in said semiconductor film.

85. (Amended) A method of manufacturing a semiconductor device comprising:

providing a semiconductor film on an insulating surface;

providing a metal-containing material on said semiconductor film;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film

and function to promote the crystallization of said semiconductor film;

introducing a gettering material into an entire surface of the crystallized semiconductor film;

heating said semiconductor film in a nitrogen atmosphere after introducing said gettering material in order to getter the metal contained in said semiconductor film; and

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C.J.*  
removing at least said entire surface after gettering the metal in said semiconductor film.

*Cvntd*  
86. (Amended) A method of manufacturing a semiconductor device having a junction, said method comprising:

providing a semiconductor film doped with boron at a concentration of 0.001-0.1 atm% on an insulating surface;

providing a metal on said semiconductor film;

crystallizing said semiconductor film by heating to cause said metal to diffuse through the semiconductor film and to promote the crystallization of said semiconductor film;

forming a gettering layer comprising phosphorus over said semiconductor film after the crystallization thereof;

heating said semiconductor film and said gettering layer in order to getter the metal in said semiconductor film by said gettering layer; and

forming a junction using an intrinsic semiconductor film.

87. (Amended) A method of manufacturing a semiconductor device having a junction, said method comprising:

providing a substantially intrinsic semiconductor film on an insulating surface;

providing a metal on said semiconductor film;

crystallizing said semiconductor film by heating to cause said metal to diffuse through the semiconductor film and to promote the crystallization of said semiconductor film;

introducing a gettering material into an entire surface of the crystallized semiconductor film;

heating said semiconductor film after introducing said gettering material in order to getter the metal in said semiconductor film by said phosphorus;

removing at least said entire surface after gettering the metal in said semiconductor film; and

forming a junction using a doped semiconductor film.

88. (Amended) A method of manufacturing a semiconductor device having a junction, said method comprising:

providing a semiconductor film doped with boron at a concentration of 0.001-0.1 atm% on an insulating surface;

providing a metal on said semiconductor film;

crystallizing said semiconductor film by heating to cause said metal to diffuse through the semiconductor film and to promote the crystallization of said semiconductor film;

introducing a gettering material into an entire surface of the crystallized semiconductor film;

heating said semiconductor film and said gettering material in order to getter the metal in said semiconductor film;

removing at least said entire surface after gettering the metal in said semiconductor film; and

forming a junction using an intrinsic semiconductor film.

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C/S  
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89. (Amended) A method of manufacturing a semiconductor device comprising:

providing a semiconductor film on an insulating surface;  
forming a metal-containing material on said semiconductor film, said metal being a material which facilitates crystallization of said semiconductor film, but which when present in a final product of the semiconductor device degrades operation of the semiconductor device;

crystallizing said semiconductor film by heating in a way that causes said metal-containing material to diffuse into at least a part of the semiconductor film, said metal-containing material when so diffused functioning to facilitate said crystallization;

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*GSS*  
*Cont'd*

introducing a gettering material into an entire surface of  
the crystallized semiconductor film;

processing said semiconductor film after introducing said  
gettering material to remove at least one portion of said metal  
in said semiconductor film; and

removing at least said entire surface of the crystallized  
semiconductor film after gettering the metal in said  
semiconductor film.

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97. (Amended) A method according to any one of claims 81-89  
wherein said semiconductor device is a photoelectric conversion  
device.